

REMARKS

By the above amendment in the accompanying RCE, independent claims 1 - 5 have been amended to clarify and recite further features of the present invention. More particularly, the range of weight percentage of a constituent component of the liquid crystal layer has been clarified to recite a range from 40 % weight percentage to less than 100 % weight percentage, and the dielectric anisotropy has been clarified to indicate that the absolute value thereof, i.e., $|\Delta\epsilon| \leq 1$. Further, new dependent claims 18 - 22 have been presented further reciting the features of $|\Delta\epsilon| > 0$. Applicants submit that the recited features of the independent and dependent claims of this application are not disclosed or taught in the cited art, as will become clear from the following discussion.

The rejection of claims 1, 3, 8, 10, 13, 15 under 35 USC 103(a) as being unpatentable over Komatsu (US 5,986,735) in view of Okada (EP 0344753A2); the rejection of claims 2, 4, 9, 11, 14, 16 under 35 USC 103(a) as being unpatentable over Komatsu et al in view of Okada, and further in view of Fergason (US 5,132,815); and the rejection of claims 5 - 7, 12, 17 under 35 USC 103(a) as being unpatentable over Komatsu (US 5,986,735) in view of Ilcisin et al (US 5,414,440); such rejections are traversed insofar as they are applicable to the present claims and reconsideration and withdrawal of the rejections are respectfully requested.

With regard to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of

the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

At the outset, applicants note that the present invention is directed to a liquid crystal display device of an in-plane switching mode type, wherein, as recited in each of independent claims 1 - 5, the liquid crystal display device comprises a plurality of pixel electrodes and common electrodes, both of the pixel electrodes and the

common electrodes are supported on one of the pair of substrates, for supplying an electric field to the liquid crystal layer, and the electric field has a component which extends substantially in parallel to the one of the pair of substrates. Furthermore, each of the independent claims recite additional features, which as described in the specification of this application, enable an improved display. Applicants submit that while Komatsu is directed to an in-plane switching liquid crystal display device, none of the secondary references utilized by the Examiner in combination with Komatsu are directed to an in-plane switching liquid crystal display device, and applicants submit that the proposed combination represents a hindsight reconstruction attempt, utilizing the principal of "obvious to try" which is not the standard of 35 USC 103. See, In re Fine, supra. Thus, applicants submit that the combination proposed by the Examiner is not a proper combination, and fails to provide the recited features of the claims, as will become clear from the following discussion.

Turning first to Komatsu, the Examiner contends that "Komatsu teaches that the liquid crystal layer contains 100 % weight of a constituent component, being the only one disclosed, that has a dielectric anisotropy of $\Delta\epsilon < 0$, which is within the claimed range of $\Delta\epsilon \leq 1$." (emphasis added). By the present amendment, each of the independent claims has been amended to recite the feature that the liquid crystal layer contains "a range from 40 % weight percentage to less than 100 % weight percentage of a constituent component." (emphasis added) (claims 1, 3 and 5) or "a range from 40% weight percentage to no more than 90% weight percentage of a constituent component" (emphasis added) (claims 2 and 4). Thus, other constituents components necessarily make up at least 40% weight percentage. As recognized by the Examiner, Komatsu does not disclose or teach that the liquid crystal layer contains different constituent components having different weight percentages, such

that by the present amendment, reciting the feature that the liquid crystal layer contains a range from 40% weight percentage to less than 100% weight percentage of a constituent component, patentably distinguishes over Komatsu with respect to this feature alone. Additionally, with respect to the dielectric anisotropy, even assuming arguendo that the disclosure of Komatsu of $\Delta\epsilon < 0$ may be considered to fall within the claimed range, it is not seen that Komatsu discloses an absolute value within the range and newly added dependent claims 18 - 22 recite the feature that the dielectric anisotropy of " $\Delta\epsilon > 0$ ", which thereby excludes the dielectric anisotropy of Komatsu. Thus, Komatsu also fails to disclose or teach the aforementioned feature and all claims patentably distinguish thereover with respect to this feature also. Additionally, the Examiner recognizes that "Komatsu fails to teach that the liquid crystal display device is configured so that a response time between a lowest brightness level and a highest brightness level, or between gray levels, is less than 16.7 ms, such that such feature of the independent claims of this application further patentably distinguishes over Komatsu. Accordingly, applicants submit that applicants submit that all claims present in this application patentably distinguish over Komatsu in the sense of 35 USC 103 and should be considered allowable thereover.

The Examiner, at least recognizing some deficiency of Komatsu, suggests that it would be obvious to combine Komatsu with Okada, in order to obtain the claimed features. Applicants submit that the Examiner has engaged in a hindsight reconstruction attempt utilizing the principle of "obvious to try" which is not the standard of 35 USC 103. See, In re Fine, supra. More particularly, applicants submit that Komatsu discloses an in-plane switching mode liquid crystal display utilizing a nematic liquid crystal composition. On the other hand, Okada, which does

not disclose or teach an in-plane switching liquid crystal device, is directed to a liquid crystal device comprising a matrix electrode structure including scanning electrodes and data electrodes intersecting each other and forming a pixel at each intersection, and a ferroelectric liquid crystal interposed therebetween. As apparent from the example at page 5, lines 30 - 38, the liquid crystal is formed of two glass substrates, each having transparent electrodes thereon with the ferroelectric liquid crystal interposed therebetween. Thus, not only does Okada fail to provide an in-plane switching type liquid crystal display device, but applicants submit that the utilization of a ferroelectric liquid crystal material of Okada in place of the nematic liquid crystal material of Komatsu is improper, because the combination leads to inoperability of the in-plane switching type of liquid crystal display device of Komatsu, as modified. Thus, applicants submit that the combination of Komatsu and Okada is not proper, and all claims patentably distinguish thereover and should be considered allowable at this time.

As to the addition of Fergason to the combination of Komatsu and Okada, applicants submit that Fergason fails to overcome the deficiencies of the combination as pointed out above. Furthermore, while the Examiner contends that Fergason teaches a liquid crystal color display device where dyes are added to the liquid crystal, it is noted that Fergason also fails to disclose an in-plane switching type of liquid crystal display device. Furthermore, as recited in the claims, other constituents of the liquid crystal layer are necessarily present in an amount on the order of about 40 % weight percentage, which feature is not disclosed or taught by Fergason. More particularly, looking to Examples 1 and 3 at column 23 of Fergason, in Example 1, the amount of dye M-361 represents only about 0.04 % weight percentage of the nematic liquid crystal and in Example 3, the amount of dye D-37 is

on the order of about 4% weight percentage of the nematic liquid crystal. Thus, it is apparent that the Examiner has engaged in hindsight reconstruction in an attempt to meet claim limitations which are not met. Accordingly, all claims patentably distinguish over this proposed combination of references in the sense of 35 USC 103 and should be considered allowable thereover.

As to the combination of Komatsu and Ilcisin et al, the deficiencies of Komatsu have been pointed out above. Additionally, the Examiner recognizes that "Komatsu fails to teach that said liquid crystal layer has a birefringence Δn and a dielectric anisotropy $\Delta \epsilon$, which satisfied the condition $\Delta n/\sqrt{\Delta \epsilon} \leq 5.5 \times 10^{-2}$ ". The Examiner contends that such features are taught by Ilcisin. Irrespective of the Examiner's comments, applicants note that Ilcisin, like the other secondary references is not directed to an in-plane switching liquid crystal display device, as claimed and while the Examiner is able to manipulate values as disclosed by Ilcisin to meet the condition as set forth, applicants submit that the condition as set forth relates to an in-plane switching type of liquid crystal display device, such that hereagain, the Examiner has engaged in a hindsight reconstruction attempt utilizing what applicant has taught against the teacher, which is not proper. See In re Lee, supra. Further, Ilcisin does not overcome the other deficiencies of Komatsu, as pointed out above. Accordingly, applicants submit that all claims of this application patentably distinguish over the proposed combination of Komatsu and Ilcisin in the sense of 35 USC 103 and all claims should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims, as amended, patentably distinguish over the cited art and should now be in condition for allowance. Accordingly, issuance of an action of favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 520.38252CC2), and please credit any excess fees to such deposit account.

Respectfully submitted,

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